

In Canada.—Prof. R. F. Stupart says:

The temperature was below the average over British Columbia, and in Alberta, Saskatchewan and western Assiniboia, and elsewhere in the Dominion above the average, except to the northward of Lake Superior and in portions of the Gulf of St. Lawrence. In British Columbia and the Northwest Territories the negative departures varied between 1° and 4°, whereas the plus departures were from 2° to 3° in Manitoba; from 1° to 5° in Ontario; from 1° to 3° in Quebec, and from 0° to 2° in the Maritime Provinces.

PRECIPITATION.

The distribution of total monthly precipitation is shown on Chart III.

The precipitation was in excess in southeastern New England, the lower Lake region, and parts of the upper Lake region, Ohio Valley, Middle Atlantic States, and the Carolinas, and in northern Missouri, Kansas, southeastern Nebraska, eastern Iowa, southern and central Minnesota, Wisconsin, northern Illinois, the upper Rio Grande Valley, western parts of New Mexico and Colorado, southern and eastern Utah, southern California, Arizona, except the extreme southeastern part, west-central South Dakota, and south-central Montana; elsewhere it was deficient, the greatest minus departures being reported from the Gulf States.

Snow occurred during the month, except in Delaware, eastern Maryland, the South Atlantic and Gulf States, western Tennessee, the southern parts of Oklahoma, New Mexico, Arizona, and California. At the end of the month the winter's snow had disappeared, except on the high ranges of the Rocky and Sierra Nevada Mountains. On the last two days of the month considerable snow fell over the States of Kansas, Nebraska, Iowa, Minnesota, Wisconsin, and Michigan, generally melting as it fell, but small amounts of this still remained on the ground in scattered localities at the close of the month.

Average precipitation and departure from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		<i>Inches.</i>		<i>Inches.</i>	<i>Inches.</i>
New England.....	8	3.35	113	+0.2	+2.1
Middle Atlantic.....	12	2.80	85	-0.5	+1.0
South Atlantic.....	10	3.02	88	-0.4	+1.2
Florida Peninsula*.....	8	0.59	26	-1.7	+6.1
East Gulf.....	9	1.49	32	-3.1	+3.5
West Gulf.....	7	1.12	29	-2.7	+0.7
Ohio Valley and Tennessee.....	11	3.87	97	-0.1	+0.1
Lower Lake.....	8	3.92	169	+1.6	+2.0
Upper Lake.....	10	2.70	117	+0.4	-0.2
North Dakota*.....	8	0.96	49	-1.0	-1.6
Upper Mississippi Valley.....	11	3.47	113	+0.4	-0.6
Missouri Valley.....	11	2.52	86	-0.4	-1.0
Northern Slope.....	7	1.72	100	0.0	-0.1
Middle Slope.....	6	1.74	81	-0.4	-0.2
Southern Slope*.....	6	1.20	48	-1.3	+0.9
Southern Plateau*.....	13	0.93	176	+0.4	-0.1
Middle Plateau*.....	8	1.09	110	+0.1	0.0
Northern Plateau*.....	12	0.66	57	-0.5	-2.3
North Pacific.....	7	2.58	62	-1.6	-6.2
Middle Pacific.....	5	0.63	26	-1.8	-2.1
South Pacific.....	4	1.83	138	+0.5	+0.8

*Regular Weather Bureau and selected voluntary stations.

In Canada.—Professor Stupart says:

In the Maritime Provinces and over the eastern part of Quebec the precipitation was everywhere above the average, St. John, N. B., recording as much as 3.1 inches above; elsewhere, except locally, the average was not maintained, the Ottawa Valley and the northern portion of the Lake region being especially deficient in rainfall. The exceptions where the average was exceeded were Lakes Erie and Ontario and their environs, northwestern Saskatchewan, northern Alberta, and northern British Columbia. At the close of the month a considerable amount of snow lay on the ground on the north shores of Lake Superior, both in the bush and also in the open country. In Cariboo, also, 1 foot was still reported on the level ground, with very deep snow on the mountains.

HAIL.

The following are the dates on which hail fell in the respective States:

Alabama, 7, 8, 12, 13, 19, 20. Arizona, 2, 9, 17, 28. Arkansas, 6, 7, 8, 9, 11, 12, 13, 18, 19, 21, 29. California, 1, 2, 9, 10, 13, 14, 15, 16, 17, 26. Colorado, 1, 2, 9, 12, 15, 21, 24, 25, 26, 28. Connecticut, 4, 24. Delaware, 4. District of Columbia, 4. Florida, 13. Georgia, 3, 8, 12, 13, 14, 19, 20, 26. Idaho, 1, 3, 5, 8, 9, 10, 11, 15, 18, 20, 22, 26, 28. Illinois, 3, 10, 11, 12, 19, 25, 30. Indiana, 3, 11, 12, 13, 19. Indian Territory, 12, 18. Iowa, 1, 10, 11, 12, 19, 27, 28, 29. Kansas, 2, 3, 7, 10, 12, 17, 18, 19, 22, 23, 28, 29, 30. Kentucky, 3, 8, 12, 13, 19, 20, 30. Maine, 4, 11, 16, 19. Maryland, 3, 4, 12. Massachusetts, 4, 16. Michigan, 1, 2, 3, 11, 12, 14, 24, 30. Minnesota, 2, 6, 10. Mississippi, 8, 19, 25. Missouri, 3, 6, 7, 8, 10, 11, 12, 13, 14, 18, 19, 20, 24, 29. Montana, 9, 18. Nebraska, 11, 17, 18, 27, 28, 29. Nevada, 1, 10, 16, 17, 27. New Jersey, 4, 14. New Mexico, 26. New York, 3, 4, 7, 14, 15, 22. North Carolina, 14, 15, 20, 21, 22, 26. North Dakota, 12. Ohio, 3, 11, 12, 20, 24, 25, 30. Oklahoma, 29. Oregon, 3, 4, 5, 9, 10, 11, 13, 14, 17, 18, 26. Pennsylvania, 2, 3, 12. Rhode Island, 31. South Carolina, 12, 14, 17, 20, 21, 25, 26. South Dakota, 28, 29. Tennessee, 3, 7, 8, 9, 12, 13, 14, 19, 20, 21, 22, 26. Texas, 8, 12, 18, 23, 28, 29. Utah, 1, 9, 10, 17, 18, 19, 22, 27, 28. Vermont, 10. Virginia, 14. Washington, 2, 3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 17, 18, 19, 20, 22. West Virginia, 13, 19, 23. Wisconsin, 1, 2, 12, 28, 30. Wyoming, 2, 21.

SLEET.

The following are the dates on which sleet fell in the respective States:

Arizona, 2, 9. Arkansas, 3. California, 9, 10. Colorado, 10, 17, 20, 21, 28, 29. Connecticut, 4. Delaware, 4. Idaho, 4, 11, 30. Illinois, 3, 21, 25, 30. Indiana, 3, 4, 22. Iowa, 3, 6, 23, 28, 29, 30. Kansas, 2, 3, 12, 28, 29, 30. Kentucky, 3, 22. Maine, 4, 5, 7, 15, 16, 17, 25. Maryland, 4. Massachusetts, 4, 15, 16. Michigan, 1, 2, 3, 6, 7, 8, 13, 14, 15, 28, 29, 30. Minnesota, 6, 7, 28, 29, 30. Missouri, 23, 29, 30. Montana, 2, 9, 10, 11, 16, 18. Nebraska, 7, 28, 29, 30. Nevada, 1, 14. New Hampshire, 4. New Jersey, 4, 5. New Mexico, 2, 23, 29. New York, 3, 4, 14, 15, 16, 22. North Dakota, 27. Ohio, 3, 4, 11, 22, 23, 24. Oregon, 4, 9, 10. Pennsylvania, 4, 23. South Dakota, 6, 28, 29. Tennessee, 3, 14, 22, 26. Utah, 1, 2, 10, 11, 17, 18, 27, 28. Vermont, 15, 16. Virginia, 5. Washington, 3, 5, 6, 7, 8, 9, 10, 14. West Virginia, 4. Wisconsin, 1, 2, 14, 15, 21, 24, 28, 29, 30. Wyoming, 1, 5, 25, 28.

SUNSHINE AND CLOUDINESS.

The distribution of sunshine is graphically shown on Chart VII, and the numerical values of average daylight cloudiness, both for individual stations and by geographical districts, appear in Table I.

The averages for the various districts, with departures from the normal, are shown in the following table:

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	5.2	-0.1	Missouri Valley.....	5.0	-0.4
Middle Atlantic.....	5.4	+0.2	Northern Slope.....	5.0	-0.4
South Atlantic.....	4.8	+0.4	Middle Slope.....	4.2	-0.2
Florida Peninsula.....	3.5	-0.4	Southern Slope.....	4.9	+0.7
East Gulf.....	4.4	-0.1	Southern Plateau.....	2.8	+0.5
West Gulf.....	4.5	-0.7	Middle Plateau.....	4.2	-0.3
Ohio Valley and Tennessee.....	6.0	+0.7	Northern Plateau.....	5.7	-0.6
Lower Lake.....	5.2	-0.3	North Pacific.....	6.8	+0.3
Upper Lake.....	5.8	+0.1	Middle Pacific.....	3.3	-1.3
North Dakota.....	4.7	-0.8	South Pacific.....	3.9	0.0
Upper Mississippi Valley.....	5.9	+0.4			

HUMIDITY.

The averages by districts appear in the subjoined table:

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	72	- 1	Missouri Valley	63	- 2
Middle Atlantic	67	- 0	Northern Slope	62	+ 4
South Atlantic	69	- 3	Middle Slope	60	+ 3
Florida Peninsula	70	- 4	Southern Slope	55	0
East Gulf	73	+ 3	Southern Plateau	33	+ 3
West Gulf	68	+ 4	Middle Plateau	51	+ 6
Ohio Valley and Tennessee	69	+ 4	Northern Plateau	59	+ 2
Lower Lake	73	+ 3	North Pacific	76	0
Upper Lake	70	- 1	Middle Pacific	66	- 4
North Dakota	66	- 2	South Pacific	71	+ 3
Upper Mississippi Valley	68	0			

ATMOSPHERIC ELECTRICITY.

Numerical statistics relative to auroras and thunderstorms are given in Table IV, which shows the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month, respectively.

Thunderstorms.—Reports of 2677 thunderstorms were received during the current month as against 2404 in 1902 and 2149 during the preceding month.

The dates on which the number of reports of thunderstorms for the whole country was most numerous were: 12th, 335; 11th, 176; 19th, 166.

Reports were most numerous from: Missouri, 301; Iowa, 164; Illinois, 148; Tennessee, 147.

Auroras.—The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four preceding and following the date of full moon, viz: 7th to 15th.

In Canada: Thunderstorms were reported at St. John, N. F.,

18th; Bissett, 2d; Toronto, 30th; Port Stanley, 2d, 3d; Parry Sound, 2d, 30th; Medicine Hat, 22d; Hamilton, Bermuda, 22d, Sable Island, 24th. Auroras were reported at Quebec, 26th; Montreal, 2d; Minnedosa, 27th; Swift Current, 5th.

WIND.

The maximum wind velocity at each Weather Bureau station for a period of five minutes is given in Table I, which also gives the altitude of Weather Bureau anemometers above ground.

Following are the velocities of 50 miles and over per hour registered during the month:

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Amarillo, Tex.	2	50	w.	Mount Tamalpais, Cal. . .	17	51	nw.
Atlanta, Ga.	3	50	nw.	Do.	18	56	nw.
Block Island, R. I.	4	54	nw.	Do.	25	55	nw.
Do.	14	55	ne.	Do.	26	67	nw.
Do.	15	60	ne.	New York, N. Y.	4	55	nw.
Do.	16	53	ne.	Do.	15	52	ne.
Do.	17	51	n.	Do.	18	53	nw.
Buffalo, N. Y.	9	51	w.	North Head, Wash.	21	50	se.
Do.	30	52	w.	Point Reyes Light, Cal. .	1	77	nw.
Cape Henry, Va.	4	55	nw.	Do.	2	58	nw.
Chicago, Ill.	2	53	s.	Do.	3	60	nw.
Do.	3	51	ne.	Do.	4	71	nw.
Cleveland, Ohio.	3	50	nw.	Do.	5	52	nw.
Columbus, Ohio.	12	52	sw.	Do.	9	62	nw.
El Paso, Tex.	2	73	sw.	Do.	10	60	nw.
Fort Smith, Ark.	3	50	w.	Do.	17	55	nw.
Hatteras, N. C.	4	53	n.	Do.	22	58	nw.
Do.	14	52	w.	Do.	23	52	nw.
Jacksonville, Fla.	13	51	sw.	Do.	25	59	nw.
Lexington, Ky.	8	50	nw.	Do.	26	70	nw.
Memphis, Tenn.	3	56	w.	Syracuse, N. Y.	2	55	s.
Do.	8	64	nw.	Do.	30	58	nw.
Mount Tamalpais, Cal. . .	4	54	nw.	Tatoosh Island, Wash. . .	3	50	sw.
Do.	5	56	n.	Do.	5	51	sw.
Do.	9	71	nw.	Do.	6	55	sw.
Do.	10	56	nw.	Do.	7	55	nw.
Do.	13	50	nw.	Valentine, Nebr.	17	55	se.
Do.	14	59	nw.				

DESCRIPTION OF TABLES AND CHARTS.

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For description of tables and charts see page 582 of REVIEW for December, 1902.